Jen Ziemke, Ph.D.

PROFILE

- **Associate Professor**, Political Science, John Carroll University, in residence since 2008.
- Consultant, Endogeneity, LLC. Ideation & program development for a diverse set of hard problems in conflict & security, as reach-back support for the defense, intelligence and security community, including: DoD, ONR, DIA, NIC, & National Defense University, with additional engagements over the years with the United Nations Office of the Secretary General, UN-OCHA, UN-SPIDER, Rockefeller Foundation, Woodrow Wilson Center, Yale, Carnegie Mellon, RIT, Notre Dame, & TED. Project coverage in several outlets includes the Voice of America, Reuters, NPR, CNN, Huffington Post, Wired, The Chronicle of Higher Education, & USGIF Magazine. Extensive experience in over 40 countries.
- **Board of Directors**, Open Geospatial Consortium, since 2015.
- **Board of Trustees**, MapStory Foundation

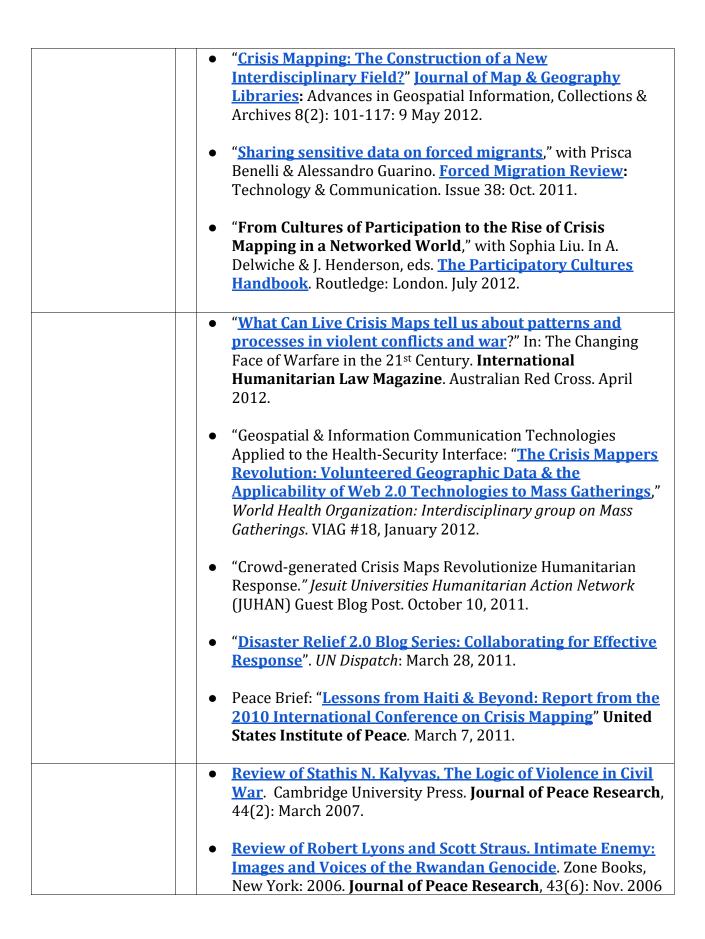
PAST POSITIONS & AFFILIATIONS

- Co-Founder & Co-Director, International Network of Crisis Mappers
- Conference Co-Organizer & Co-Founder for seven
 International Conference on Crisis Mapping (ICCM)
 conferences on four continents, with total funds raised in excess of \$1m:
 - ICCM 2016 (Manila), sponsored by the Rockefeller Foundation, MAVC, Ayala & Unilab
 - ICCM 2014 (New York), sponsored by Google Crisis Response.
 - ICCM 2013 (Nairobi), hosted by UN-Habitat, Spatial Collective, USAID, & ESRI
 - o ICCM 2012 (Washington, DC), at the World Bank & GWU
 - ICCM 2011 (Geneva), hosted by the Swiss Confederation, the ICT4Peace Foundation, & the European Commission's Joint Research Centre.
 - o ICCM 2010 (Boston), hosted by Harvard, Tufts & JCU
 - o ICCM 2009 (Cleveland), hosted by JCU & HHI.
- Fellow, Harvard Humanitarian Initiative (HHI),

	Program on Crisis Mapping & Early Warning.
	• Angola Country Specialist, <u>Amnesty International (USA)</u> ,
	• Visiting Scholar, <u>Center for the Study of Civil War</u> , <u>International Peace Research Institute (PRIO)</u> , Oslo, 2006
	• Secondary school teacher, <u>US Peace Corps Namibia</u> , 1997- 1999
EDUCATION	 Ph.D., Political Science, University of Wisconsin-Madison, 2008 Major Fields: International Relations & Comparative Politics Minor: Quantitative & Formal Methodology Thesis: From Battles to Massacres. Advisor: Scott Straus Expertise: conflict, civil war violence, African politics, archival analysis, conflict event data and analysis.
SPECIAL RECOGNITION	 M.A., Political Science, University of Wisconsin-Madison, 2002 B.A., International Relations, University of Michigan, 1997 2013 Recipient of the University of Michigan's LSA Humanitarian Service Award, the college's highest honor, presented annually by the Dean to 3 living alumni in recognition of their work. The Rockefeller Foundation. Next Century Innovators. April 2013.
	• "Turn and Burn: Loss Dynamics & Civilian Targeting in the

Angolan War," receives the Journal of Economics & Politics' **Young Scholar Award** for publications in 2012. **FEMA**. Special recognition and thanks to our community from FEMA for **Hurricane Sandy assistance** & **FEMA Federal Coordinating Officer**, thanking volunteers who have been helping review aerial imagery: Nov 5, 2012. UN Dispatch. "What the UN could not have done without the Volunteer Technical Community." March 30, 2011. • Reuters Alertnet: "AlertNet's top 20 big ideas that don't cost the earth." January 7, 2011. • Forbes. "Names you Need to Know in 2011: Crisis Mapping." Nov. 16, 2010. JOHN CARROLL UNIVERSITY **TEACHING** Associate Professor of International Relations, 2008-Present • Brain As Battlefield (Political Science 499) • Introduction to International Relations (Political Science 103) • International Conflict & Security [Honors] (397) • International Security (Political Science 333) • Introduction to Methods (Political Science 200) • International Institutions, Law, & Human Rights (PO 334) • African Politics (Political Science 332) • Rwanda in Comparative African Perspective (PO 397) • Uganda in Comparative African Perspective (PO 397) • Crisis Mapping, New Media & Politics (Political Science 324) • International Conflict Processes (Political Science 397) UNIVERSITY OF WISCONSIN-MADISON Lecturer. 2007-2008. • Political Science 660: African Politics Teaching Assistant, 2001-2008. • Introduction to International Relations • Introduction to American Politics • Introduction to Comparative Politics • Politics in Multicultural Societies • Challenges of Democratization • Quantitative Methodology • Innovation in Teaching Award, July 2007. BENEDICTINE UNIVERSITY **EXTERNAL**

ADVISING	Ph.D. dissertation committee
	NORTHWESTERN UNIVERSITY Ph.D. dissertation committee
PUBLICATIONS	 Executive Summary. SMA CENTCOM Reach-back Reports. Part V: Sources of Extremism. January 2017. Adagiocrescendo catastropheadagio. SMA CENTCOM Reach-back Reports. Part V: Sources of Extremism. January 2017. Executive Summary. Smart Phones for Propaganda. SMA CENTCOM Reach-back Reports. January 2017. "Crisis Mapping for Conflict Analysis," Newsletter of the Africa Research Initiative. Volume 1(1): August 2014. "Conflict Mapping 3.0," The Magazine of the International Red Cross and Red Crescent. 2014.
	 "Turn and Burn: Loss Dynamics & Civilian Targeting in the Angolan War," Journal of Economics & Politics. Volume 20(1). Akron, OH: December 2012. The definitive version is available at http://www.oaeps.org/. Article received the Journal of Economics & Politics' Young Scholar Award for publications in 2012.



INVITED PRESENTATIONS PANELS & KEYNOTES

- Africa: Political stories from around a vast continent.
 Happy Dog Takes on Africa Terrorism, Conflict & Crises of Leadership. Cleveland Council on World Affairs. Cleveland, OH. December 12, 2017.
- Invited Speaker: <u>Machine Learning for the Developing</u>
 <u>World</u>. NIPS 2017 Workshop. Long Beach, CA. December 8,
 2017.
- Humanitarian Mapping Applications for GIS Day. Lakeland Community College. November 15, 2017.
- SMA CENTCOM Iraq/Syria Reach Back Panel Discussion. Arlington, VA. April 27, 2017.
- 10th Annual Strategic Multi-Layer Assessment Conference. Joint Base Andrews. April 25-26, 2017.
- Invited Participant. Disaster Preparedness Exchange (DPX).
 Camp Atterbury & Muscatatuck Urban Training Center,
 Indiana. September 13-14, 2016.
- "Big Data in Africa." Arlington, VA. April 7, 2016.
- Guest Lecturer for a course on Social Media Legal, Policy & Ethical Issues at the Center for Technology & National Security Policy. National Defense University, Washington, DC. March 9, 2016.
- **TED**. Advanced perceptualization & sonification for understanding conflict datasets. Brooklyn, NY. Nov 14, 2015.
- Keynote: Crowd dynamics: exploring patterns in crowdsourced crisis mapping. <u>Swarm/Human Blended Intelligence</u> <u>Workshop</u>. Cleveland, OH. September 28, 2015.
- Keynote: <u>State of the Map, Taiwan: 2015</u>. Taipei, Taiwan. September 19, 2015.
- Guest Lecturer for a course on Social Media Legal, Policy & Ethical Issues at the Center for Technology & National Security Policy. National Defense University, Washington, DC. April 30, 2015.

- Invited Remarks. <u>Influencing War: Next Steps for the Analysis of Crowdsourced Conflict Event Data</u>. <u>Threat Day</u>. Combating Terrorism Technical Support Office.
 Washington, DC. January 8, 2015.
- Presentation: With Dr. Lin Wells. Crisis Mapping and Open Source Geospatial Information Systems (GIS). DHS/START and SMA Technical Lecture Series Teleconference. December 1, 2014.
- Panel Presentation: Understanding Social Systems in Phase Zero. 8th Annual Strategic Multilayer Assessment (SMA) Conference. Joint Base Andrews, Washington. October 29, 2014.
- Convergence: How Volumes of crowdsourced, real-time event data on conflict, analyzed and tasked via global volunteer networks, influence war's ground game, and thus shape best practices, tactics and strategies for CT & COIN.
 MINERVA/SMA/DIA Africa Lecture Series. Oct 16, 2014.
- Keynote & Panel Discussion: <u>Crisis Mapping: how public-public and private-private partnerships support disaster response & recovery operations</u>. Hosted by AFCEC: US Air Force Civil Engineer Center, <u>Joint Base San Antonio-Lackland</u>, Texas: July 23, 2014.
- GIScience Colloquium with joint discussion on Crisis Mapping and Humanitarian Aid. Department of Geoinformatics, Z_GIS. Salzburg, Austria. May 26, 2014.
- Keynote: <u>ICU/NYC Presidential Alumni Reception</u>, United Nations, New York: May 21, 2014.
- Keynote: <u>Library of Congress, Washington Map Society</u>: April 17, 2014.
- "Systemic Resilience: The Technological Puzzle." <u>8th Asia-Pacific Programme for Senior National Security Officers</u>.
 Singapore: April 2014.
- Analytic Exchange. **US Department of State, Bureau of Intelligence & Research:** January 31, 2014.
- "Strengthening technological capacities and information access for improving disaster risk reduction in the Horn of Africa."

- Wilton Park, an Agency of the British Foreign and Commonwealth Office. Nairobi: January 22, 2014. Cancelled (travel delay).
- "From macro, cross-national studies of conflict to crowdsourced war data: sensemaking for conflicts as complex systems." **Africa Geostrategic Intelligence Seminar:** January 7, 2014.
- Crowdsourcing & Crisis Mapping for disaster response," <u>United Nations Technical Advisory Mision to the Government of Cabo Verde</u>. <u>UN Office of Outer Space Affairs</u>, Cabo Verde: Aunew field?" <u>Carnegie Mellon University</u>: April 30, 2012.
- "A revolution in humanitarian response," Rochester Institute of Technology: April 25, 2012.
- "GIS and Crisis Mapping," <u>21st Annual Spatial-Digital</u> <u>Mapping Conference</u>. New York State GIS Assosciation: April 24, 2012.
- "Advanced Visualization & Analysis of Conflict Event Data,"
 Crisis Mappers Monthly Webinar Series: March 28, 2012.
- "Global Health & Crisis Response," Notre Dame University, Eck Institute for Global Health [video archive], South Bend, Indiana: February 6, 2012.
- "Mobile Technology in Times of Crisis." Ideas@MaRS, Toronto: June 9-10, 2011.
- "Understanding the limits: What challenges need to be overcome to fulfill the design potential for a GIVAS system?" GIVAS Blue Sky Thinkers Workshop, United Nations Office of the Secretary General. Bellagio, Italy: 6-9 April 2010.
- "Leveraging Crowdsourced Mapping, Big Data, and Social Media for Biodefense," <u>American Society for Microbiology</u>, <u>Biodefense and Emerging Diseases Research</u> <u>Meeaporeting</u>. Focus Session: "<u>Using Social Networks for</u> <u>Tracking Health and Disease</u>." Washington, DC. February 25, 2013.
- "Crisis Mapping's Impact on Africa & Its Implications
 Worldwide: A Training & Interdisciplinary Dialogue," <u>Academy</u>
 <u>of Management Africa Conference</u>, with Kerrie Carfagno.

Johannesburg, South Africa: January 7-10, 2013.

- Crowdsourced Mapping for Emergency Response. The United Nations, <u>International Expert Meeting on Crowdsourced</u> <u>Mapping for Disaster Risk Management and Emergency</u> <u>Response</u>. Vienna International Center: December 3-5, 2012.
- "Public and Volunteer Engagement: Connecting Grassroots to Government for Disaster Management," <u>Woodrow Wilson</u> <u>International Center for Scholars</u>. Washington: Sept 13, 2012.
- "Communities of Interest Leadership Meeting." UN-OCHA, Office for the Coordination of Humanitarian Affairs. Geneva: Nov 13. 2011."
- "Understanding the Strengths & Mapping the Needs of the Emergency Response Community" UN-SPIDER International Expert Meeting: Crowdsource Mapping for Preparedness & Emergency Response. Vienna, Austria: 5-6 July 2011.
- "Volunteer & Technology Communities," Information and Communication Technology for Humanitarian Assistance/Disaster Relief. Office of Naval Research & the University of Colorado. Colorado Springs: May 25-26, 2011.
- "The Libyan Uprising" City Club, Cleveland: March 30, 2011.
- "Blue-Sky Thinkers Workshop", UN Office of the Secretary General, which led to the creation of the new initiative: <u>UN</u> <u>Global Pulse</u>. April 2010.
- "Spatial Analysis in Conflict Research," Yale, April 2008.
- Participant: Joint Field-based Experimentation, <u>IFIX RELIEF</u>
 12-2: Research & Experimentation for Local & International Emergency 1st Responders. Paso Robles, CA: Feb 2012.

FUNDED GRANT PROPOSALS

In support of **ICCM 2016 Manila**:

Funding from, among others, the **Rockefeller Foundation**, **Making All Voices Count**, **Ayala Corporation**, **Unilab**, & the **ICT4Peace Foundation**

In support of **ICCM 2014 New York**:

Funding from **Google Crisis Response**, the New School, ESRI & the ICT4Peace Foundation

In support of **ICCM 2013 Nairobi**:

Funding from UN-Habitat, Spatial Collective, USAID, ESRI, Humanity United, Google, Qatar Computing Research Institute, The ICT4Peace Foundation, USIP, iHub & Ushahidi.

In support of **ICCM 2012 Washington**:

Funding from The World Bank Institute, World Bank's GFDRR Labs, The George Washington University, Google, Ushahidi, ESRI, John Carroll University, GeoEye, Digital Globe & AT&T.

In support of **ICCM 2011 Geneva**:

Funding from Swiss Confederation, the ICT4Peace Foundation, the European Commission's Joint Research Centre, the World Bank, ESRI & John Carroll University.

In support of **ICCM 2010 Boston**:

Funding from Humanity United, the United States Institute of Peace, Open Society Institute, Knight Foundation, Google Mapmaker Team, ESRI, Ushahidi, The World Bank, The Fletcher School at Tufts University, John Carroll University, Harvard Humanitarian Initiative & GeoTime.

In support of **ICCM 2009 Cleveland**:

Funding from the **Open Society Institute**, **Humanity United**, **United States Institute of Peace**, **JCU**, **Harvard** & **GeoTime**.

Ethics Across the Curriculum: Summer Course Development Fellowship to develop, "Rwanda in Comparative African Perspective"

Kahl Award for Internationalizing the Curriculum. Covered fees for the immersion trip to Reynosa, Mexico Jan. 2010 & Jan 2009.

CSISS Grant. "Advances in Spatial Regression Analysis" at **Arizona State University**, January 12-15, 2009. **CSISS Grant**.

"GIS and Spatial Modeling for the Undergraduate Social Science Curriculum," Ohio State University , June 2007.
National Security Education Program, David L. Boren, fellowship for dissertation research 2005-2006

CONFERENCE PAPERS

- "Using Machine Learning to Understand Dynamics of Conflict." With Lujie Chen and Artur Dubrawski. INFORMS Annual Meeting: Panel on Data Mining. Pheonix: October 2012
- "Loss frames and deliberate civilian targeting in the Angolan war, 1961-2002," Presented at the Annual Meeting of the American Political Science Association (APSA), Toronto: Sept 5, 2009
- "From Battles to Massacres: Explaining Spatial and Temporal Variation in Civilian Targeting During the Angolan Civil War, 1961-2002," Midwest Political Science Association Meeting (MPSA), Chicago, IL: April 3, 2009.
- "From Battles to Massacres. (Version 2.0)" Prepared for the 3rd Annual Harvard-Yale-MIT Graduate Student Conference on Order, Conflict and Violence. **Yale University**, New Haven, CT. April 18-19, 2008.
- "From source to symbol: developing methods for coding armed conflict location events using ACLED," Prepared for delivery at the Annual conference of the International Studies Association, San Diego, CA: March 2006
- "How violence in civil war can sputter and then surge: understanding the logic of escalation in the Angolan war," GROW, Center for the Study of Civil War, PRIO: Oslo, Norway: Feb 2006.
- "Predation, Production or Presents? How revenue shapes violent patterns in civil war," Prepared for the annual meeting of the American Political Science Association: September 2005.
- "Patterns of Civil War Violence," Prepared for the annual meeting of the MPSA: April 2005.

MEDIA COVERAGE: RADIO

- National Public Radio. <u>Crisis Mapping</u>. Monday, Sept 17, 2012. WKSU 89.7
- National Public Radio. <u>Emerging Field of Crisis Mapping</u>
 <u>Brings Order to Chaos.</u> Ideas Stream, National Public Radio:
 WCPN 90.3: January 21, 2011.
- PBS. Crisis Mappers: Mobile technology helps disaster victims worldwide. May 13, 2011.

TELEVISION

- CNN. Continuing Coverage of the Haiti Earthquake. <u>Developing Story: Online Organizers</u> & <u>Reports Relayed to Aid Groups on the Ground</u>. January 2010.
- WKYC Cleveland Channel 3. <u>ICU Professor Sends Relief to</u>
 <u>Haiti Victims using Crisis Mapping</u>. January 24, 2010 & <u>ICU Professor making life-saving connections in Japan</u>. March 12, 2011.

QUOTED IN INT'L OUTLETS

- Trajectory Magazine. <u>Defeating Disaster: Fueled by Open-Source Software & Crowdsourcing, The Crisis Mapping Community is Rapidly Expanding</u>. 2014 issue 3.
- La Repubblica. S.O.S.: Il mondo salvato da una mappa. Jan 15, 2012.
- Voice of America News. "Crowdmapping Arab Spring Next Social Media Breakthrough?" June 28, 2011.
- Reuters Alertnet. "Q & A: Crisis Mappers look at Haiti lessons and beyond." October 1, 2010.
- Éthiques & Sociétés, Le Magazine De Référence Des ONG. <u>La cartographie de crise</u> [see pg. 14-15]. September 2010.
- CNN. Citizens Monitor Gulf Coast After Oil Spill. May 6, 2010.
- The Global Post: <u>Opinion: Crowdsourcing Crisis</u> <u>Information</u>. November 29, 2009.
- National Public Radio. <u>Virtual Volunteers Use Twitter & Facebook to Make Maps of Nepal</u>. May 5, 2015.

QUOTED,

• Trajectory: US Geospatial Intelligence Foundation. July

NATIONAL OUTLETS

2014.

- The Chronicle of Higher Education. <u>Academics Join Relief</u> <u>Efforts Around the World as Crisis Mappers</u>. March 27, 2011.
- Government Computer News. <u>How GIS can make you a better citizen</u>. June 10, 2011.

LOCAL COVERAGE

- Cleveland Business Connects. <u>Peace of Find</u>. August 24, 2016.
- <u>USAID Global Development Commons</u>. Coverage of my doctoral research: <u>Crisis Mapping in Angola Helps to Predict When Combatants Will Target Civilians</u>. See also: <u>the view of the Angola data in Google Earth</u>. August 12, 2009.
- FreshWater Cleveland. <u>ICU Prof Founded CrisisMappers to</u> <u>keep people in the know across the globe</u>. Sept 27, 2012.
- John Carroll Magazine. <u>Crisis mapping. Academics</u>, <u>technology</u>, and a global network born on campus improve humanitarian aid.

COVERAGE OF THE CRISIS MAPPERS NETWORK

- Huffington Post. <u>How Digital Humanitarians are Closing</u> the Gaps in Worldwide <u>Disaster Response</u>. January 29, 2016.
- Huffington Post. <u>Crisis Mapping in Nepal. Plenty of Bandwidth, Not Enough Time</u>. July 5, 2015.
- GIS Lounge. <u>How crowdsourced mapping is supporting</u> relief efforts in Nepal. 2015.
- Nature. <u>Crisis mappers turn to citizen scientists</u>. November 19, 2014.
- CBC News. <u>Typhoon Haiyan creates testing ground for crisis mappers.</u> December 18, 2013.
- Thomson Reuters. <u>Wanted: disruptive ideas to change the aid system</u>. December 2, 2013.
- International Federation of the Red Cross. <u>World Disasters</u> Report. 2013.

- **Gizmodo.** What happens when cities fall apart? October 5, 2013.
- Wired. <u>How AI, Twitter & digital volunteers are</u> <u>transforming humanitarian disaster response</u>. September 30, 2013.
- The Hindu. <u>Using crisis mapping to aid Uttarakhand</u>. June 28, 2013.
- National Defense University. "Constructive Convergence: Imagery & Humanitarian Assistance." February 2012.
- Harvard Business Review. "Design your own profession." (Anne-Marie Slaughter) December 22, 2011.
- UNISDR. "<u>Crisis Mapping & Disaster Risk Reduction</u>." United Nations International Strategy for Disaster Reduction, December 2011.
- United Nations General Assembly. "<u>Space-based</u> <u>information for crowdsourced mapping</u>." Report of the Secretariat. December 6, 2011.
- The Economist. A web of support. July 14, 2011.
- The World Bank Blog. "How Scalable Web 2.0 is Changing the World of Disaster Management." June 1, 2011.
- The World Bank/GFDRR Labs. "Volunteer Technology <u>Communities: Open Development</u>." Global Facility for Disaster Reduction and Recovery. March 31, 2011.
- The New York Times. "Online Mapping Shows Potential to Transform Relief Efforts." March 28, 2011.
- FastCompany. "Here's a Map of the Humanitarian Crisis Hotspots in Libya (Don't tell Gaddafi)." March 9, 2011.
- Humanitarian Information Unit, US Department of State.
 "Haiti Earthquake: Breaking New Ground in the Humanitarian Information Landscape." July 2010.
- Washington Post. "Crisis mapping brings online tool to Haitian disaster relief effort." January 16, 2010.

- Tech President. "As Prop, Cudgel or Sensor, Digital Maps have a future in Global Activism." January 16, 2013.
- ReliefWeb. "<u>Latest Innovations in Crisis Mapping</u>." October 19, 2012.
- Emergency Journalism Centre. "<u>Identified Issues, Positive</u>
 <u>Developments: Coverage from Crisis Mappers Conference.</u>"
 October 23, 2012.
- The Guardian (UK). Links to a video filmed at ICCM 2012.
- Crisis Mappers featured on UN-OCHA's website. "Virtual Volunteering Opportunities." World Humanitarian Day, August 19, 2011.
- Homeland Security Blog. "<u>The Promises and Challenges of Crisis Tech Response Volunteers.</u>" October 22, 2010.
- IRIN. "Analysis: Finding Space for Crowd-sourcing in humanitarian response." July 5, 2010.
- **UTNE Reader: "Mapping the Crisis."** November 19, 2009.
- Reuters Alertnet. "<u>Crisis mapping brings X-ray style clarity to humanitarian response</u>." October 12, 2009. (also includes coverage of my research on the Angolan war)
- UN-OCHA. "EXPERIENCE: How online volunteers helped respond to the humanitarian crisis in Libya." UN Volunteers, August 2011.
- IRIN. "<u>Libya: How online mapping helped crisis response</u>." May 12, 2011.

UNIVERSITY SERVICE

- Department of Political Science **Tenure & Promotion Chair** for Dr. Colin Swearingen, as of 9/7/2016
- Initiated a new interdisciplinary occasional series covering important issues at the local, national and international level, Rant on Rails. Hosted: "War in Korea?" - November 16, 2017.
- Representative, Core Sub-Committee on Engaging the Global Community, (EGC) Fall 2014-2016.

- Coordinator, JCU student veteran lounge (2012-Present)
- JCU Medical & Mapping Immersion to Honduras. Rural community mapping, health surveys, and patient intake data. May 27-June 5, 2015.
- Division III Representative, **Faculty Council**: 2009-2012.
- Secretary/Treasurer, JCU Division of the *American Association* of University Professors. 2010-2011.
- Information Technology Services Steering Committee: 2011-2014.
- Advisory Committee, Peace, Justice & Human Rights: 2009-Present.
- Immersion Experience Team Leader, Center for Service and Social Action: Kampala & Gulu, <u>Uganda</u>: May 2013.
- Arranged: <u>Mapping Day</u> a Technical Assistance Workshop during the Crisis Mapping Immersion: Kampala and Gulu, Uganda: Late May-June 2013.
- Immersion Experience Team Leader, Center for Service and Social Action: Kigali, Butare & Gisenyi, Rwanda: January 2011.
- Immersion Experience Team Leader, Reynosa, Mexico: January 2009 & 2010.
- Developing skills in object-oriented programming: MaxMSP/Max 7. 2017.
- "Introduction to Dynamical Systems and Chaos," Santa Fe Institute. Winter 2014.
- "Advances in Spatial Econometrics", CSISS @ Arizona State University, January 2009.
- Intensive course on Spatial Regression Models, <u>UNC-Chapel</u> <u>Hill</u>, Mar. 2007.
- IQRM Consortium on Qualitative Research Methods, Arizona State, Jan. 2006.

PROFESSIONAL DEVELOPMENT

